

# National Functional Guidelines Report #03

Lab SENTIN(SENTINEL) SDG MF4N61 Case 41486 Contract EPW09040 Region 6 DDTID 125316 SOW ISM01.2

## *Data Review Reports*

Blanks

Blanks	ICP_MS
ND03	<p>The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.</p> <p>PBW, MF4N61, MF4N62, MF4N63L, MF4N63, MF4N63D, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N26, MF4N33, MF4N34, MF4N40, MF4N55, MF4N56, MF4N65, MF4N66</p> <p>Arsenic PBW</p> <p>Antimony MF4N61 , MF4N62 , MF4N63L , MF4N63 , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N47 , MF4N25 , MF4N48 , MF4N26 , PBW , MF4N33 , MF4N34 , MF4N40 , MF4N55 , MF4N56 , MF4N65 , MF4N66</p> <p>Thallium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N22 , MF4N25 , MF4N26 , PBW , MF4N33 , MF4N55</p> <p>Cadmium MF4N61 , MF4N62 , MF4N63 , MF4N63L , MF4N63D , MF4N22 , MF4N47 , MF4N25 , MF4N26 , MF4N33 , MF4N34 , MF4N40 , MF4N55 , MF4N65</p>
Blanks	ICP_MS
ND04	<p>The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.</p> <p>PBW, MF4N47, MF4N48, MF4N63L, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N33, MF4N34, MF4N40, MF4N56, MF4N66, MF4N62, MF4N55, MF4N61, MF4N63, MF4N63D, MF4N25, MF4N26, MF4N65</p> <p>Arsenic PBW</p> <p>Chromium MF4N47 , MF4N48</p> <p>Potassium PBW</p> <p>Lead MF4N63L , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N47 , MF4N48 , MF4N33 , MF4N34 , MF4N40 , MF4N56 , MF4N66</p> <p>Sodium PBW</p> <p>Selenium MF4N62 , MF4N63L , MF4N16 , MF4N23 , PBW , MF4N55 , MF4N56</p> <p>Barium MF4N63L</p> <p>Cobalt MF4N63L , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N47 , MF4N48 , MF4N34 , MF4N40 , MF4N56</p> <p>Beryllium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N64 , MF4N25 , MF4N26 , MF4N55 , MF4N65</p> <p>Antimony MF4N61 , MF4N62 , MF4N63L , MF4N63 , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N40 , MF4N47 , MF4N25 , MF4N48 , MF4N26 , PBW , MF4N33 , MF4N34 , MF4N55 , MF4N56 , MF4N65 , MF4N66</p> <p>Cadmium MF4N61 , MF4N62 , MF4N63 , MF4N63L , MF4N63D , MF4N22 , MF4N47 , MF4N25 , MF4N26 , MF4N33 , MF4N34 , MF4N40 , MF4N55 , MF4N65</p> <p>Thallium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N22 , MF4N25 , MF4N26 , PBW , MF4N33 , MF4N55</p> <p>Silver MF4N63</p>
Blanks	ICP_MS
ND05	<p>The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or</p>

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### Blanks

Blanks	ICP_MS
	equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	MF4N63A, MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N55, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N56, MF4N65, MF4N66
	Vanadium MF4N63A
	Selenium MF4N63A
	Arsenic MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N63A, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N55, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N56, MF4N65, MF4N66
	Chromium MF4N63A
	Cobalt MF4N63A
	Antimony MF4N63S, MF4N63A, LCS
	Thallium MF4N63S, LCS
	Cadmium MF4N63S, LCS
	Manganese MF4N63A
Blanks	ICP_MS
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	MF4N63A, MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N55, MF4N56, MF4N65, MF4N66
	Vanadium MF4N63A
	Arsenic MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N63A, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N49, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N55, MF4N56, MF4N65, MF4N66
	Chromium MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N63A, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N55, MF4N56, MF4N65, MF4N66
	Nickel MF4N63A
	Potassium MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N26, LCS, MF4N33, MF4N34, MF4N40, MF4N55, MF4N56, MF4N65, MF4N66
	Copper MF4N63A
	Sodium LCS, MF4N56
	Selenium MF4N61, MF4N63A, MF4N63, MF4N63L, MF4N63S, MF4N63D, MF4N64, MF4N22, MF4N24, MF4N40, MF4N47, MF4N25, MF4N48, MF4N26, LCS, MF4N33, MF4N34, MF4N65, MF4N66
	Cobalt MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N63A, MF4N25, MF4N26, LCS, MF4N33, MF4N55, MF4N65, MF4N66
	Aluminum MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N55, MF4N26, MF4N33, MF4N34, MF4N40, MF4N56, MF4N65, MF4N66, LCS

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Blanks

Blanks	ICP_MS
	Beryllium MF4N63S , MF4N63A , LCS
	Antimony MF4N63S , MF4N63A , LCS
	Thallium MF4N63S , LCS
	Cadmium MF4N63S , LCS
	Magnesium MF4N61 , MF4N62 , MF4N63L , MF4N63 , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N47 , MF4N25 , MF4N48 , MF4N26 , LCS , MF4N33 , MF4N34 , MF4N40 , MF4N55 , MF4N56 , MF4N65 , MF4N66
	Manganese MF4N63A
	Silver MF4N63S , MF4N63A , LCS
Blanks	ICP_MS
NE04	The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF4N62 , MF4N16 , MF4N23 , MF4N55 , MF4N56 , MF4N61 , MF4N63 , MF4N63D , MF4N64 , MF4N22 , MF4N40 , MF4N24 , MF4N25 , MF4N47 , MF4N48 , MF4N26 , MF4N33 , MF4N34 , MF4N65 , MF4N66
	Selenium MF4N62 , MF4N16 , MF4N23 , MF4N55 , MF4N56
	Antimony MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N24 , MF4N25 , MF4N47 , MF4N48 , MF4N26 , MF4N33 , MF4N34 , MF4N55 , MF4N56 , MF4N65 , MF4N66
	Thallium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N22 , MF4N25 , MF4N26 , MF4N33 , MF4N55
Blanks	ICP_MS
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS , MF4N56 , MF4N61 , MF4N63A , MF4N63 , MF4N63D , MF4N63S , MF4N64 , MF4N22 , MF4N40 , MF4N24 , MF4N47 , MF4N48 , MF4N25 , MF4N26 , MF4N33 , MF4N34 , MF4N65 , MF4N66 , MF4N62 , MF4N63L , MF4N16 , MF4N23 , MF4N55
	Sodium LCS , MF4N56
	Selenium MF4N61 , MF4N63A , MF4N63 , MF4N63D , MF4N63S , MF4N64 , MF4N22 , MF4N40 , MF4N24 , MF4N47 , MF4N48 , MF4N25 , MF4N26 , LCS , MF4N33 , MF4N34 , MF4N65 , MF4N66
	Arsenic MF4N61 , MF4N63A , MF4N62 , MF4N63 , MF4N63L , MF4N63S , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N24 , MF4N40 , MF4N47 , MF4N25 , MF4N48 , MF4N26 , LCS , MF4N33 , MF4N34 , MF4N55 , MF4N56 , MF4N65 , MF4N66
	Antimony MF4N63A , MF4N63S , LCS
	Potassium MF4N61 , MF4N62 , MF4N63 , MF4N63L , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N24 , MF4N25 , MF4N47 , MF4N48 , MF4N26 , LCS , MF4N33 , MF4N34 , MF4N55 , MF4N56 , MF4N65 , MF4N66
	Thallium MF4N63S , LCS

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#### Detection Limit

Detection Limit	ICP_MS
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J. PBW, MF4N47, MF4N48, MF4N63L, MF4N16, MF4N22, MF4N40, MF4N24, MF4N56, MF4N65, MF4N64, MF4N23, MF4N33, MF4N34, MF4N66, MF4N62, MF4N55, MF4N61, MF4N63, MF4N63D, MF4N25, MF4N26
Arsenic PBW	
Chromium MF4N47 , MF4N48	
Potassium PBW	
Copper MF4N63L , MF4N16 , MF4N22 , MF4N40 , MF4N47 , MF4N24 , MF4N48 , MF4N56 , MF4N65	
Lead MF4N63L , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N24 , MF4N47 , MF4N48 , MF4N33 , MF4N34 , MF4N56 , MF4N66	
Sodium PBW	
Selenium MF4N62 , MF4N63L , MF4N16 , MF4N23 , PBW , MF4N55 , MF4N56	
Barium MF4N63L	
Cobalt MF4N63L , MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N47 , MF4N24 , MF4N48 , MF4N34 , MF4N56	
Beryllium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N64 , MF4N25 , MF4N26 , MF4N55 , MF4N65	
Zinc MF4N16 , MF4N24	
Antimony MF4N61 , MF4N62 , MF4N63 , MF4N63L , MF4N63D , MF4N64 , MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N24 , MF4N47 , MF4N48 , MF4N25 , MF4N26 , MF4N33 , PBW , MF4N34 , MF4N55 , MF4N56 , MF4N65 , MF4N66	
Cadmium MF4N61 , MF4N62 , MF4N63 , MF4N63L , MF4N63D , MF4N22 , MF4N40 , MF4N47 , MF4N25 , MF4N26 , MF4N33 , MF4N34 , MF4N55 , MF4N65	
Thallium MF4N61 , MF4N62 , MF4N63 , MF4N63D , MF4N22 , MF4N25 , MF4N26 , MF4N33 , PBW , MF4N55	
Silver MF4N63	
Iron MF4N16 , MF4N22 , MF4N23 , MF4N40 , MF4N24 , MF4N47 , MF4N48 , MF4N34 , MF4N56	

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Duplicates

Duplicates	ICP_MS
NI03	The following Duplicate and original sample results are greater than 5xCRQL and RPD is greater than 20. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.  MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66
	Aluminum MF4N63D
	Iron MF4N63D
Duplicates	ICP_MS
NI04	The following Duplicate or original sample results are less than or equal to 5xCRQL and the absolute difference between duplicate and original samples are greater than CRQL. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.  MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66
	Zinc MF4N63D

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Holding Times/Preservation

Holding Times/Preservation	ICP_MS
NHT01	<p>The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.</p> <p>MF4N61, MF4N62, MF4N63, MF4N63L, MF4N63D, MF4N63S, MF4N64, MF4N63A, MF4N16, MF4N22, MF4N23, MF4N24, MF4N47, MF4N25, MF4N48, MF4N55, MF4N26, MF4N33, MF4N34, MF4N40, MF4N56, MF4N65, MF4N66</p>

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**Data Review Reports**

## Matrix Spikes

<b>Matrix Spikes</b>	<b>ICP_MS</b>
NG054	The following ICP-MS samples are not qualified due to missing the required Post-digestion spike added in the Spike sample analysis. MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66 Vanadium MF4N63A Selenium MF4N63A Arsenic MF4N63A Chromium MF4N63A Cobalt MF4N63A Zinc MF4N63A Nickel MF4N63A Beryllium MF4N63A Antimony MF4N63A Copper MF4N63A Manganese MF4N63A Silver MF4N63A
<b>Matrix Spikes</b>	<b>ICP_MS</b>
NG10	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries less than 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ. MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66 Zinc MF4N63S Beryllium MF4N63S
<b>Matrix Spikes</b>	<b>ICP_MS</b>
NG11	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ. MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66 Vanadium MF4N63S Selenium MF4N63S Arsenic MF4N63S Chromium MF4N63S

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Matrix Spikes

Matrix Spikes	ICP_MS
	Cobalt MF4N63S
	Nickel MF4N63S
	Antimony MF4N63S
	Copper MF4N63S
	Manganese MF4N63S
	Silver MF4N63S

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#### Serial Dilution

Serial Dilution	ICP_MS
NL032	The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified UJ. MF4N61, MF4N62, MF4N63, MF4N64, MF4N16, MF4N22, MF4N23, MF4N24, MF4N25, MF4N26, MF4N33, MF4N34, MF4N40, MF4N47, MF4N48, MF4N55, MF4N56, MF4N65, MF4N66
	Vanadium MF4N63L
	Chromium MF4N63L
	Cobalt MF4N63L
	Barium MF4N63L
	Nickel MF4N63L
	Aluminum MF4N63L
	Manganese MF4N63L
	Iron MF4N63L